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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/523,308	08/18/2005	Markus Huber	GRUNP47	7689

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EXAMINER	
CANTELMO, GREGG	
ART UNIT	PAPER NUMBER
1795	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/523,308	HUBER ET AL.	
	Examiner	Art Unit	
	Gregg Cantelmo	1795	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *29 January 2005 and 29 June 2006*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-20* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-20* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *29 January 2005* is/are: a)☐ accepted or b)☒ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *See Continuation Sheet*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

Continuation of Attachment(s) 3). Information Disclosure Statement(s) (PTO/SB/08), Paper No(s)/Mail Date :1/29/05; 1/22/07; 2/28/07; 1/2/08; 2/14/08.

DETAILED ACTION

Response to Preliminary Amendment

1. The preliminary amendments received January 29, 2005 and June 29, 2006 have been entered. Action on the merits of claims 1-20 follows.

Priority

2. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

Information Disclosure Statement

3. The information disclosure statements filed January 29, 2005; January 22, 2007; February 28, 2007; January 2, 2008 and February 14, 2008 have been placed in the application file and the information referred to therein has been considered as to the merits.

Specification

4. The amendments to the specification filed in the preliminary amendments received January 29, 2005 and June 29, 2006 have been entered.

Drawings

5. Figures 1 and 2 should be designated by a legend such as --Prior Art-- because only that which is old is illustrated. See MPEP § 608.02(g). Corrected drawings in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the

applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

6. Claims 1-3 and 11-12 are rejected under 35 U.S.C. 102(b) as being clearly anticipated by JP 09-134732 (JP '732).

JP '732 discloses a plate element for a fuel cell stack in Figs. 6 and 8 comprising a peripheral plate region which frames the interior flow field portion of the plate and a plurality of webs which extend from the frame region into the inner region of the plate and define a recess for fluid flow. At least four manifold bore holes are provided in the plate and the central pair of bore holes are connected by the recess and flow guidance structure (Figs. 6 and 8 as applied to claims 1 and 11). The plate is provided in a fuel cell having a membrane electrode assembly (para. 19 as applied to claim 11).

The guidance structure is a meandering flow channel (Figs. 6 and 8 as applied to claim 2).

The plate is conductive (abstract as applied to claims 3 and 12).

7. Claims 1-3 and 11-12 are rejected under 35 U.S.C. 102(b) as being clearly anticipated by JP 2000-100457 (JP '457).

JP '457 discloses a plate element for a fuel cell stack in Figs. 3 and 4 comprising a peripheral plate region which frames the interior flow field portion of the plate and a plurality of webs which extend from the frame region into the inner region of the plate and define a recess for fluid flow. At least four manifold bore holes are provided in the plate and the central pair of bore holes are connected by the recess and flow guidance structure (Fig. 4 as applied to claims 1 and 11). The plate is provided in a fuel cell having a membrane electrode assembly (abstract and Figs. as applied to claim 11).

The guidance structure is a meandering flow channel (Fig. 4 as applied to claim 2).

The plate is conductive (abstract as applied to claims 3 and 12).

8. Claims 1-4, 8-9, 11-12 and 16-17 are rejected under 35 U.S.C. 102(b) as being clearly anticipated by JP 10-162842 (JP '842).

JP '842 discloses a plate element for a fuel cell stack in Figs. 1 and 2 comprising a peripheral plate region which frames the interior flow field portion of the plate and a plurality of webs which extend from the frame region into the inner region of the plate and define a recess for fluid flow. At least four manifold bore holes are provided in the plate and the central pair of bore holes are connected by the recess and flow guidance structure (Figs. 1 and 2 as applied to claims 1 and 11). The plate is provided in a fuel cell having a membrane electrode assembly (abstract and Figs. as applied to claim 11).

The guidance structure is a meandering flow channel (Figs. 1 and 2 as applied to claim 2).

The plate is conductive (abstract as applied to claims 3 and 12).

The plate is metal (paras. 9-11 as applied to claim 4).

The plate includes opposed ribs 11 (Fig. 2 as applied to claims 8, 9, 16 and 17).

9. Claims 1-3, 8-9, 11-12 and 16-17 are rejected under 35 U.S.C. 102(b) as being clearly anticipated by EP 1220347 (EP '347).

EP '347 discloses a plate element for a fuel cell stack in Figs. 11 and 12 comprising a peripheral plate region which frames the interior flow field portion of the plate and a plurality of webs which extend from the frame region into the inner region of the plate and define a recess for fluid flow. At least four manifold bore holes are provided in the plate and the central pair of bore holes are connected by the recess and flow guidance structure (Figs. 11 and 12 as applied to claims 1 and 11). The plate is provided in a fuel cell having a membrane electrode assembly (abstract, para. 3 and Figs as applied to claim 11).

The guidance structure is a meandering flow channel (Figs. 11 and 12 as applied to claim 2).

The plate is conductive (abstract as applied to claims 3 and 12).

The plate includes opposed ribs 11 (Figs. 11 and 12 as applied to claims 8, 9, 16 and 17).

10. Claims 1-20 are rejected under 35 U.S.C. 102(a) as being clearly anticipated by EP 1429406 (EP '406) as evidenced by U.S. Patent Application Publication No. 2006/0127741 (Muller).

Applicant cannot rely upon the foreign priority papers to overcome this rejection because a translation of said papers has not been made of record in accordance with 37 CFR 1.55. See MPEP § 201.15.

EP '406 discloses a plate element for a fuel cell stack in Fig. 7 comprising a peripheral plate region which frames the interior flow field portion of the plate and a plurality of webs which extend from the frame region into the inner region of the plate and define a recess for fluid flow. At least four manifold bore holes are provided in the plate and the central pair of bore holes are connected by the recess and flow guidance structure (Fig. 7 as applied to claims 1 and 11). The plate is provided in a fuel cell having a membrane electrode assembly (as applied to claim 11).

The guidance structure is a meandering flow channel (Fig. 11 as applied to claim 2).

The plate is conductive (abstract as applied to claims 3 and 12).

The plate can be metal, insulating or a combination of both (see paras. 5 and 19-20 as applied to claims 4-7 and 13-15).

The plate includes opposed ribs offsetting ribs (Fig. 7 as applied to claims 8-10, 16-20).

11. Claims 1-3, 8-9, 11-12 and 16-17 are rejected under 35 U.S.C. 102(b) as being clearly anticipated by U.S. Patent No. 6,066,408 (Vitale).

Vitale discloses a plate element for a fuel cell stack in Figs. 11 and 12 comprising a peripheral plate region which frames the interior flow field portion of the plate and a plurality of webs which extend from the frame region into the inner region of the plate and define a recess for fluid flow. At least four manifold bore holes are provided in the plate and the central pair of bore holes are connected by the recess and flow guidance structure (Figs. 11 and 12 as applied to claims 1 and 11). The plate is provided in a fuel cell having a membrane electrode assembly (abstract, para. 3 and Figs as applied to claim 11).

The guidance structure is a meandering flow channel (Figs. 11 and 12 as applied to claim 2).

The plate is conductive (abstract as applied to claims 3 and 12).

The plate includes opposed ribs 11 (Figs. 11 and 12 as applied to claims 8, 9, 16 and 17).

12. Claims 1-3, 5 and 11-13 are rejected under 35 U.S.C. 102(b) as being clearly anticipated by U.S. Patent No. 6,174,616 (Marvin).

Marvin discloses a plate element for a fuel cell stack in Fig. 2 comprising a peripheral plate region which frames the interior flow field portion of the plate and a plurality of webs which extend from the frame region into the inner region of the plate and define a recess for fluid flow. At least four manifold bore holes are provided in the plate and the central pair of bore holes are connected by the recess and flow guidance structure (Fig. 2 as applied to claims 1 and 11). The plate is provided in a fuel cell having a membrane electrode assembly (as applied to claim 11).

The guidance structure is a meandering flow channel (Fig. 2 as applied to claim 2).

The plate is bipolar or monopolar (col. 5, ll. 51-60) and thus is either conductive or insulative as applied to claims 3, 5, 12 and 13).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to

consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 6, 7, 19 and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over either JP '842, EP '347 or Vitale as applied to claim 1 above, and further in view of JP 63-236268 (JP '268).

Each of JP '842, EP '347 and Vitale teach of extending ribs (discussed above as applied to claims 19 and 20).

The differences between these references and claims 6 and 7 are that these references do not teach of the multilayer insulating/conducting arrangements for the separator plate.

JP '268 teaches of providing a multilayer separator having an insulating layer 1 and outer conducting layers 2 (abstract and Figs. 2).

This combination, along with the extending rib permits connection in a layered cell arrangement but can isolate any faulty cell in the stack.

Therefore it would have been obvious to one of ordinary skill in the art at the time the claimed invention was made to modify the teachings of either JP '842, EP '347 or Vitale by providing the multilayer separator of JP '268 since it would have provided a configuration which can effectively isolate any faulty cell within a stack of cells.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Gregg Cantelmo whose telephone number is 571-272-1283. The examiner can normally be reached on Monday to Thursday, 8:30-6:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Pat Ryan can be reached on 571-272-1292. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Gregg Cantelmo/
Primary Examiner, Art Unit 1795